

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
VPI/99-105SERIAL NO.  
09/591,464INFORMATION DISCLOSURE  
STATEMENT BY APPLICANTAPPLICANTS  
Michael R. Hale, et al.FILING DATE  
June 9, 2000GROUP  
1614/626

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<i>DNW</i>	3,743,722	7/3/73	Mohrs et al.	424	98	
	4,330,542	5/18/82	Descamps et al.	424	248.5	
	4,629,724	12/16/86	Ryono et al.	514	18	
	5,196,438	3/23/93	Martin et al.	514	311	
	5,354,866	10/11/94	Kempf et al.	546	265	
	5,622,949	4/22/97	Talley et al.	514	237.8	
	5,723,490	3/3/98	Tung et al.	514	478	
	5,744,481	4/28/98	Vazquez et al.	514	311	
<i>DNW</i>	5,843,946	12/1/98	Vazquez et al.	514	252.11	

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
<i>DNW</i>	0 022 118	1/7/81	EP				
	0 181 071	3/14/86	EP				
	0 264 795	4/27/88	EP				
	0 346 847	12/20/89	EP				
	0 364 804	4/25/90	EP				
	0 434 365	6/26/91	EP				
	0 468 641	1/29/92	EP				
	0 486 948	5/27/92	EP				
	0 541 168	5/12/93	EP				
	0 594 540	4/27/94	EP				
<i>DNW</i>	3542567	6/5/86	DE				

EXAMINER

*Amya N. Wright*

DATE CONSIDERED 5-18-01

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. VPI/99-105	SERIAL NO. 09/591,464
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANTS Michael R. Hale, et al.	
		FILING DATE June 9, 2000	GROUP <del>1614</del> 1626

Onw	2,167,759	6/4/86	GB				
	2,200,115	7/27/88	GB				
	WO90/07329	7/12/90	PCT				
	WO91/00725	1/24/91	PCT				
	WO91/18866	12/12/91	PCT				
	WO92/08688	5/29/92	PCT				
	WO92/08698	5/29/92	PCT				
	WO92/08699	5/29/92	PCT				
	WO92/08700	5/29/92	PCT				
	WO92/08701	5/29/92	PCT				
	WO92/17176	10/15/92	PCT				
	WO93/23368	11/25/93	PCT				
	WO93/23388	11/25/93	PCT				
	WO93/23379	11/25/93	PCT				
	WO94/04491	3/3/94	PCT				
	WO94/04492	3/3/94	PCT				
	WO94/04493	3/3/94	PCT				
	WO94/05639	3/17/94	PCT				
	WO94/10134	5/11/94	PCT				
	WO94/10136	5/11/94	PCT				
	WO94/18192	8/18/94	PCT				
	WO94/19322	9/1/94	PCT				
	WO95/06030	3/2/95	PCT				
	WO95/07269	3/16/95	PCT				
	WO95/09843	4/13/95	PCT				
	WO95/14016	5/26/95	PCT				
	WO95/32185	11/30/95	PCT				
	59046252	3/15/84	JP				
	59048449	3/19/84	JP				
Onw	61071830	4/12/86	JP				

EXAMINER

Sonya N Wright

DATE CONSIDERED 5-18-01

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. VPI/99-105	SERIAL NO. 09/591,464
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANTS Michael R. Hale, et al.	
		FILING DATE June 9, 2000	GROUP 4614-16 ZLo

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIAL	
<i>And</i>	Banker et al., <u>Modern Pharmaceutics</u> , pp. 627-629 (1996).
	R. Bone et al., "X-ray Crystal Structure of the HIV Protease Complex with L-700,417, an Inhibitor with Pseudo C <sub>2</sub> Symmetry", <u>J. Am. Chem. Soc.</u> , 113, pp. 9382-84 (1991).
	J.C. Craig et al., "Antiviral Synergy Between Inhibitors of HIV Proteinase and Reverse Transcriptase", <u>Antiviral Chem. and Chemotherapy</u> , 4(3), pp. 161-66 (1990).
	S. Crawford et al., "A Deletion Mutation in the 5' Part of the pol Gene of Moloney Murine Leukemia Virus Blocks Proteolytic Processing of the gag and pol Polyproteins", <u>J. Virol.</u> , 53, pp. 899-907 (1985).
	M. Cushman et al., "Development of Methodology for the Synthesis of Stereochemically Pure Pheψ[CH <sub>2</sub> N]Pro Linkages in HIV Protease Inhibitors", <u>J. Org. Chem.</u> , 56, pp. 4161-67 (1991).
	D.S. Dhanoa et al., "The Synthesis of Potent Macrocyclic Renin Inhibitors", <u>Tetrahedron Lett.</u> , 33, pp. 1725-28 (1992).
	G.B. Dreyer et al., "Hydroxyethylene Isostere Inhibitors of Human Immunodeficiency Virus-1 Protease: Structure-Activity Analysis Using Enzyme Kinetics, X-ray Crystallography, and Infected T-Cell Assays", <u>Biochemistry</u> , 31, pp. 6646-59 (1992).
	G.A. Flynn et al., "An Acyl-Iminium Ion Cyclization Route to a Novel Conformationally Restricted Dipeptide Mimic: Applications to Angiotensin-Converting Enzyme Inhibition", <u>J. Am. Chem. Soc.</u> , 109, pp. 7914-15 (1989).
	G. Fontenot et al., "PCR Amplification of HIV-1 Proteinase Sequences Directly from Lab Isolates Allows Determination of Five Conserved Domains", <u>Virology</u> , 190, pp. 1-10 (1992).
	J. Freskos et al., "(Hydroxyethyl)sulfonamide HIV-1 Protease Inhibitors: Identification of the 2-Methylbenzoyl Moiety at P-2", <u>Bio. &amp; Med. Chem. Lett.</u> , 6, pp. 445-450 (1996).
	A. Ghosh et al., "Potent HIV Protease Inhibitors Incorporating High-Affinity P <sub>2</sub> -Ligands and (R)-(Hydroxyethylamino)sulfonamide Isostere", <u>Bio. &amp; Med. Chem. Lett.</u> , 8, pp. 687-690 (1998).
	E.E. Gilbert, "Recent Developments in Preparative Sulfonation and Sulfation", <u>Synthesis</u> , 1969, pp. 3-10 (1969).
	A. Goldblum, "Modulation of the Affinity of Aspartic Proteases by the Mutated Residues in Active Site Models", <u>FEBS</u> , 261, pp. 241-44 (1990).
	D. Grobelny et al., "Selective Phosphinate Transition-State Analogue Inhibitors of the Protease of Human Immunodeficiency Virus", <u>Biochem. Biophys. Res. Commun.</u> , 169, pp. 1111-16 (1990).
	G.D. Hartman et al., "4-Substituted Thiophene- and Furan-2-sulfonamides as Topical Carbonic Anhydrase Inhibitors", <u>J. Med. Chem.</u> , 35, pp. 3822-31 (1992).
<i>Onw</i>	S. J. Hays et al., "Synthesis of cis-4-(Phosphonoxy)-2-piperidinecarboxylic Acid, an N-Methyl-D-aspartate Antagonist", <u>J. Org. Chem.</u> , 56, pp. 4984-4086 (1991).

EXAMINER

*Sonya N. Wright*

DATE CONSIDERED

*5-18-01*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. VPI/99-105	SERIAL NO. 09/591,464
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANTS Michael R. Hale, et al.	
		FILING DATE June 9, 2000	GROUP <del>1614</del> 1626

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIAL	
DNW	J.R. Huff, "HIV Protease: A Novel Chemotherapeutic Target for AIDS", <u>Journal of Medicinal Chemistry</u> , 34(8), pp. 2305-14 (1991).
	K.Y. Hui et al., "A Rational Approach in the Search for Potent Inhibitors Against HIV Proteinase", <u>FASEB</u> , 5, pp. 2606-10 (1991).
	Y. Kiso et al., "'O→N Intramolecular Acyl Migration'-type Prodrugs of Tripeptide Inhibitors of HIV Protease", <u>Peptides: Chemistry, Structure and Biology</u> , 61, pp. 157-159 (1996).
	N.E. Kohl et al., "Active HIV Protease Is Required for Viral Infectivity", <u>Proc. Natl. Acad. Sci. USA</u> , 85, pp. 4686-90 (1988).
	X. Lin et al., "Enzymic Activities of Two-Chain Pepsinogen, Two-Chain Pepsin, and the Amino-Terminal Lobe of Pepsinogen", <u>J. Biol. Chem.</u> , 267(24), pp. 17257-63 (1992).
	K.P. Manfredi et al., "Examination of HIV-1 Protease Secondary Structure Specificity Using Conformationally Constrained Inhibitors", <u>J. Med. Chem.</u> , 34, pp. 3395-99 (1991).
	F.R. Marshall, "Computer-Aided Drug Design", <u>Ann. Ref. Pharmacol. Toxicol.</u> , 27, pp. 193-213 (1987).
	J.A. Martin, "Recent Advances in the Design of HIV Proteinase Inhibitors", <u>Antiviral Research</u> , 17, pp. 265-78 (1992).
	T.D. Meek et al., "Inhibition of HIV-1 Protease in Infected T-Lymphocytes by Synthetic Peptide Analogues", <u>Nature</u> , 343, pp. 90-92 (1990).
	M. Miller et al., "Structure of Complex of Synthetic HIV-1 Protease with a Substrate-Based Inhibitor at 2.3 Å Resolution", <u>Science</u> , 246, pp. 1149-52 (1989).
	M. Miller et al., "Crystal Structure of a Retroviral Protease Proves Relationship to Aspartic Protease Family", <u>Nature</u> , 337, pp. 576-79 (1989).
	K.H.M. Murthy et al., "Crystal Structures at 2.2-Å Resolution of Hydroxyethylene-Based Inhibitors Bound to Human Immunodeficiency Virus Type 1 Protease Show That the Inhibitors Are Present in Two Distinct Orientations", <u>J. Biol. Chem.</u> , 267, pp. 22770-78 (1992).
	J.B. Nichols et al., "A Molecular Mechanics Valence Force Field for Sulfonamides Derived by <u>ab initio</u> Methods", <u>J. Phys. Chem.</u> , 95, pp. 9803-11 (1991).
	J. Palca, "Shooting at a New HIV Target", <u>Science</u> , 247, p. 410 (1990).
	L.H. Pearl et al., "A Structural Model for the Retroviral Proteases", <u>Nature</u> , 329, pp. 329-51 (1987).
	J.W. Perich et al., "The Synthesis of Multiple O-Phosphoserine-Containing Peptides via Phenyl Phosphate Protection", <u>J. Org. Chem.</u> , 53, pp. 4103-4105 (1988).
DNW	M.S. Plummer et al., "Design of Peptidomimetic Ligands for the pp60 <sup>src</sup> SH2 Domain", <u>Bioorganic &amp; Medicinal Chemistry</u> , 5, pp. 41-47 (1997).

EXAMINER

Donna N. Wright

DATE CONSIDERED

5-18-01

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

**EXAMINER:** Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.